VATELL CORPORATION
240 Jennelle Road, Christiansburg, VA 24073: (540) 961-2001

AMP-8 Signal Conditioning Amplifier

for **Heat Flux Microsensor (HFM)**

AMP-8 ADVANTAGES

- Customer Specified gains to fit individual applications.
- Indefinite continuous use possible with 5 V AC-to-DC adapter that plugs into the wall
- Compact Size
- Simple configuration allows easy, straight forward use.
- Input cable and 5 V AC-to-DC adapter included.

Principles of Operation:

The AMP-8 is a 2 channel signal-conditioning instrumentation amplifier designed to be used with a Vatell Corporation Heat Flux Microsensor (HFM). The HFM is a state-of-the-art sensor which requires low-noise, precision amplification. The AMP-8 is designed specifically with these requirements in mind to give the user quality data.

The HFM consists of two sensors on the same surface. The Heat Flux Sensor (HFS) measures heat flux flowing through the sensor surface. The Resistance Temperature Sensor (RTS) measures the temperature at the face of the sensor. One channel of the AMP-8 amplifies signals from the HFS portion of the HFM. The other channel excites the RTS portion of the HFM with a 100 microamp current source and then amplifies the resulting voltage signal.

Construction:

The AMP-8 has a four-pin female Lemo connector to interface with the Heat Flux Microsensor. Male BNC connectors are provided for amplified heat flux and temperature output signals. The unit is powered with a 5 V AC-to-DC adapter that plugs into the wall. Gains for heat flux and temperature channels are specified by the customer. The channels are then set and zeroed at Vatell.

Amp-8 Specifications

	Heat Flux Channel	Temperature Channel
Gain Settings	Customer specified	Customer specified
Gain Accuracy %		
Gain = 1	± 0.6	± 0.6
Gain = 100	± 1.5	± 1.5
Gain = 200, 500	± 1.5	± 1.5
Gain = 1000	± 2.1	
Gain = 5000	± 3.6	
Bandwidth	(At some selected gains)	(At some selected gains)
Gain = 1	1 MHz	1 MHz
Gain = 100	150 kHz	150 kHz
Gain = 200		100 kHz
Gain = 500	50 kHz	50 kHz
Gain = 1000	25 kHz	
Gain = 5000	5 kHz	
Input Impedence	10^9 ohms	10^9 ohms
Input Noise	0.2 microvolts	0.2 microvolts
Full Scale Output	6 Volts	6 Volts

Dimensions:

Height = 11.5 cm (4.5”) **Width = 9.0 cm (3.5”)**
Depth = 5.6cm (2.2”) **Weight = 0.45 kg (16 oz.)**